MECHANICAL ENGINEERING DEPARTMENT
UNITED STATES NAVAL ACADEMY
ANNAPOLIS, MARYLAND 21402

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From: Course Administrator, EM232 Dynamics
To: Students enrolled in EM232

Subj: EM232 DYNAMICS - COURSE OBJECTIVES AND POLICIES

1. Introduction. The EM232 Dynamics course studies particles and rigid bodies in motion. The material is developed from Newton's Laws of Motion, and relates the forces acting on a body to the motion of the body. EM232 builds on the principles and techniques taught in EM211 Statics, which is a prerequisite for this course.

2. Course Content. The main aspects of the course are *Kinematics* and *Kinetics.* Kinematics is the study of the geometry of motion of a body. It is used to relate displacement, velocity, acceleration and time, without reference or regard to the forces needed to create that motion. Kinetics is the study of the relationship between the forces acting on a body, the mass of the body, and the motion of the body. This topic also includes methods using work and energy, and impulse and momentum.

3. Course Objectives. The theory and methods taught in Dynamics are fundamental to the solution of real-world problems in many fields of engineering. Therefore, not only will you be expected to recite the principles of Dynamics, but also to apply them to engineering problems. Achieving the correct numerical answer is important, but *so is the way you communicate your solution to other engineers.* To this aim, the homework assignments, quizzes, tests and examination given in EM232 will give you practice in both problem solving and effective communication skills. You cannot expect to master this course solely by reading the text and attending class. For each scheduled class period, an average student can typically expect to spend an additional two hours studying the textbook and working problems.

4. Web page. A web page for Dynamics that contains copies of all the course-wide handouts is maintained at:

http://web.usna.navy.mil/~ratcliff/EM232/index.htm

5. Course Requirements. You are to obtain, and bring to every class, the following items:

Engineering Mechanics: Dynamics, R.C. Hibbeler, 8th Ed., Prentice Hall, 1998.
. Binder for homework, handout materials, quizzes, class notes, etc.
Calculator.
Mechanical Engineering Department Problem Solution Pad.
Template(s) and straight edges.
Soft lead pencil - mechanical pencils recommended. *Ink is unacceptable.*

6. Schedule and Homework Assignments. A schedule and assignment sheet detailing the reading and problem assignments for each class period will be distributed. Your instructor will inform you of any changes to the schedule. You are expected to read the assigned sections before coming to class. The homework assignments are to be completed after the material has been discussed in class. The required format for all submitted work is shown on a separate handout.

Your instructor will give you their specific policies concerning submission of homework. The final work you submit must be your own. Copying another person's solution is cheating and will be considered as an honor offense.

7. During this course you will be involved in a group design project. Details of this project will be issued separately.

8. Extra Instruction. It is your responsibility to arrange for extra instruction with your instructor. If you cannot meet your instructor during his posted hours, it is your individual responsibility to make other suitable arrangements. I, as Course Administrator, am available to all midshipmen enrolled on this course.

9. Calculators. The recommended calculator for this course is the TI92. When you use your calculator for complex operations, for example, solving simultaneous equations, clearly show in your solution the data you enter into your calculator, then mark the numerical answer "*by calculator."* Wrong numerical answers will be penalized, even if caused by the misoperation of your calculator.

During examinations, tests or quizzes, you may not borrow or share calculators, and laptops computers may not be used.

10. Assessments and Grading. There are several one-hour tests, which will be graded by your instructor. Your instructor may also assign additional short quizzes, which may or may not be announced ahead of time. The final 3-hour examination is common to all students enrolled in the course. Course grades will be determined as follows:

40% Average of all regular class tests and quizzes
10% Design Project
10% Instructor Evaluation and Homework
40% Final Examination

11. Instructor policy. Your instructor will give you a copy of their personal policy statement concerning this course.

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